TED (21) 4013
(Revision-2021)

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Reg.No.....
Signature.....

DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/MANAGEMENT/ COMMERCIAL PRACTICE, APRIL - 2025

ESTIMATION AND COSTING

[Maximum marks: 75] [Time: 3 Hours]

PART A

I. Answer all the following questions in one word or one sentence. Each question carries 1 mark

(9 x 1 = 9 Marks)

		Module outcome	Cognitive level
1	Write down Prismoidal formula for earthwork computation.	M1.04	R
2	The full form of GST is……..	M1.03	R
3	Accuracy of measurements for different items of work is described in IS……	M1.01	R
4	Usual percentage of Contractor's profit in rate analysis is…….	M2.01	R
5	In detailed estimates, Plastering works are expressed in……..units.	M3.03	R
6	Define Hip Rafter.	M3.02	R
7	Define the term obsolescence.	M4.01	R
8	Write down the expression to find Year's purchase.	M4.01	R
9	Define Freehold property.	M4.01	R

PART B

II. Answer any eight questions from the following. Each question carries 3 marks.

(8 x 3 = 24 Marks)

		Module outcome	Cognitive level
1	List different types of estimates.	M1.02	R
2	Explain Mid sectional formula for earthwork computation.	M1.04	U
3	Describe the term Contingencies.	M1.03	U
4	Distinguish between Lead and Lift.	M2.01	U
5	Explain the terms (a) Contractor's Profit (b) Cost Index.	M2.02	U
6	Explain centre line method of preparing detailed estimate.	M3.01	U
7	Calculate the quantity of 2^{nd} class dry brickwork in soak pit as shown in Fig.III	M3.03	U
8	Explain Rental method of valuation.	M4.03	U
9	Define (a) Book Value (b) Market Value.	M4.01	R
10	Define the term valuation. List Purposes of valuation.	M4.01	R

PART C

Answer all questions. Each question carries seven marks

(6 x 7 = 42 Marks)

<table>
<tr><th></th><th></th><th>Module outcome</th><th>Cognitive level</th></tr>
<tr><td>III</td><td>Calculate the quantity of earth work for a portion of road on a uniform ground with the following data Mean sectional method.
<table><tr><td>Length of road</td><td>200m</td></tr><tr><td>Height of bank at one end</td><td>2m</td></tr><tr><td>Height of bank at other end</td><td>3m</td></tr><tr><td>Formation width</td><td>10m</td></tr><tr><td>Side slope</td><td>2:1</td></tr></table>Assume there is no transverse slop.
OR</td><td>M1.04</td><td>A</td></tr>
<tr><td>IV</td><td>List and explain any 2 methods to prepare approximate estimate.</td><td>M1.02</td><td>U</td></tr>
<tr><td>V</td><td>Calculate the rate for standard unit of brickwork in CM 1:6
<table><tr><td rowspan="3">Materials</td><td>500 Nos. Brick @ Rs.5500/1000Nos</td></tr><tr><td>0.25m^3 dry sand @ Rs.1000/m^3</td></tr><tr><td>60Kg cement @ Rs.8000/t</td></tr><tr><td rowspan="3">Labour:</td><td>0.70 brick mason @ Rs.800/E</td></tr><tr><td>0.35 Man @ Rs.500/E</td></tr><tr><td>0.70 Woman @ Rs.400/E</td></tr></table>Take lumpsum for Scaffolding @ Rs.50/m^3
OR</td><td>M2.03</td><td>U</td></tr>
<tr><td>VI</td><td>Define the term Rate Analysis. Explain the purpose and importance of rate analysis.</td><td>M2.01</td><td>U</td></tr>
<tr><td>VII</td><td>Explain the terms: (a) Overhead Charges
(b) Local Market Rate (c) Schedule of Rates
OR</td><td>M2.02</td><td>U</td></tr>
<tr><td>VIII</td><td>Assess the rate of RR masonry in Foundation in CM 1:6
Unit 1 m^3
<table><tr><td rowspan="3">Materials</td><td>Stone – 1.25 Cum.</td></tr><tr><td>Cement – 110Kg @Rs.9000/t</td></tr><tr><td>Sand – 0.40 Cum @Rs.1250/Cum</td></tr><tr><td rowspan="3">Labour</td><td>Mason – 1.3 @Rs.900/day</td></tr><tr><td>Men Mazdoor – 1.4 @Rs.800/day</td></tr><tr><td>Women Mazdoor – 1.4 @Rs.700/day</td></tr></table>Conveyance statement:
<table><tr><td>Sl. No.</td><td>Material</td><td>Cost at Source</td><td>Per</td><td>Lead in Km</td><td>Conveyance per km</td></tr><tr><td>1</td><td>Stone</td><td>700</td><td>Km</td><td>20</td><td>12</td></tr></table></td><td>M2.03</td><td>U</td></tr>
</table>

IX	Calculate the quantities of the following items of a Half Hexagonal room as per the Plan & cross section given in Fig. I (a) Earthwork Excavation in Foundation. (b) Concrete in Foundations. **OR**	M3.02	A
X	Calculate the quantities of following items for the Slab Culvert in Fig.IV. (a) Earthwork excavation in Foundation. (b) Cement Concrete 1:3:6 in Foundation.	M3.04	A
XI	Calculate the quantities of following items for the Septic Tank and Soak Pit in Fig.III. (a) Earthwork excavation. (b) Cement Concrete 1:3:6 **OR**	M3.03	A
XII	Calculate the quantities of the following items of a two roomed building as per the Plan & cross section given in Fig.II. (a) Earthwork Excavation in Foundation (b) Concrete in Foundation	M3.02	A
XIII	Define Depreciation. Describe straight line method and Constant percentage method of finding depreciation. **OR**	M4.02	U
XIV	(a) Define Sinking Fund. (b) A person has purchased an old building at a cost of Rs. 1,50,000/- on the basis that the cost of land is Rs.50,000/- and the cost of building structure is Rs.100000/-. Considering the future life of building as 30 years, work out the amount of annual sinking fund at 5% interest when scrap value is 10% of the cost of building structure.	M4.01	U

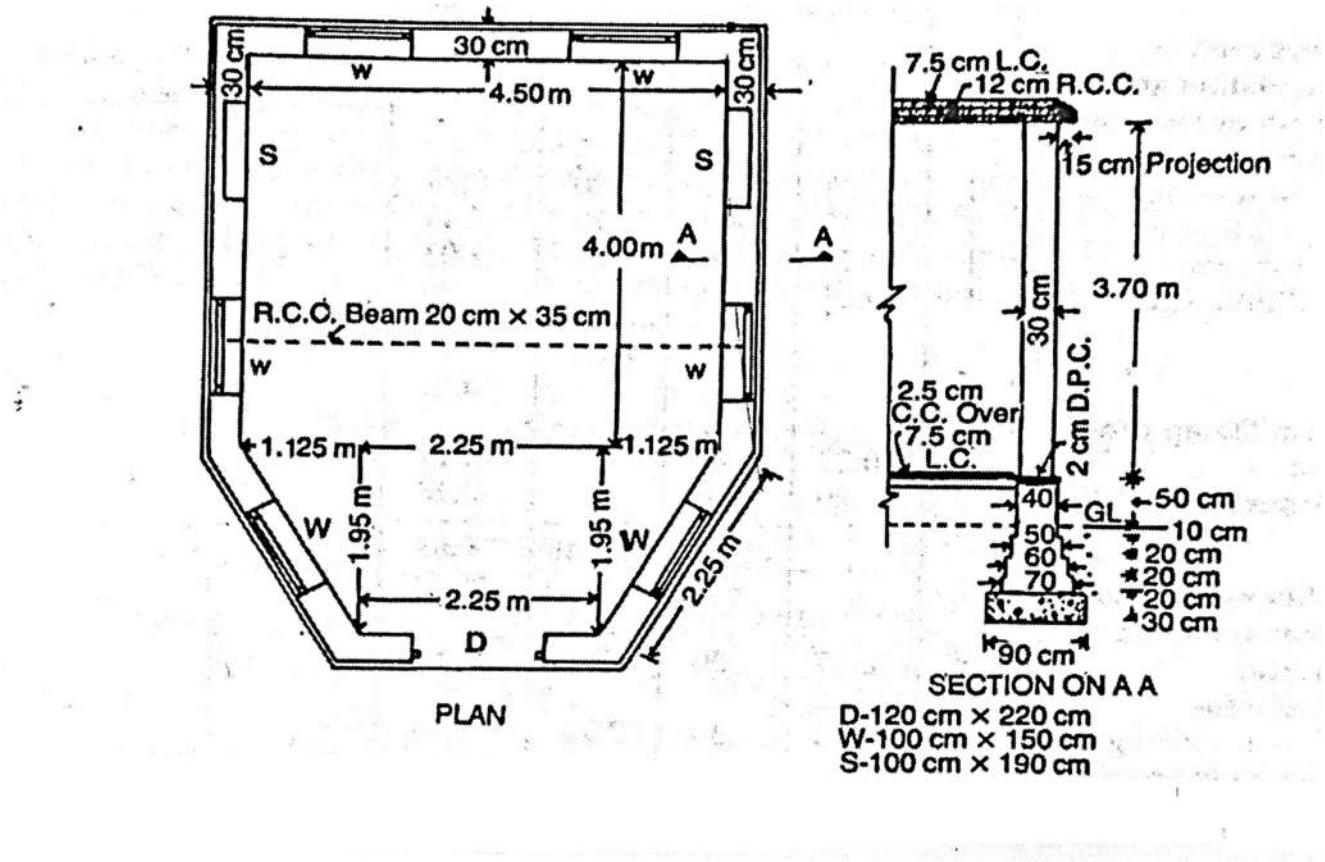
30 cm
30 cm
30 cm
W
4.50 m
W
S
S
4.00 m
A
A
R.C.C. Beam 20 cm × 35 cm
W
W
1.125 m
2.25 m
1.125 m
1.95 m
1.95 m
W
W
2.25 m
2.25 m
D
PLAN
7.5 cm L.C.
12 cm R.C.C.
15 cm Projection
3.70 m
30 cm
2 cm D.P.C.
2.5 cm
C.C. Over
7.5 cm
L.C.
40
50
60
70
GL
50 cm
10 cm
20 cm
20 cm
20 cm
30 cm
90 cm
SECTION ON A A
D-120 cm × 220 cm
W-100 cm × 150 cm
S-100 cm × 190 cm

Fig I

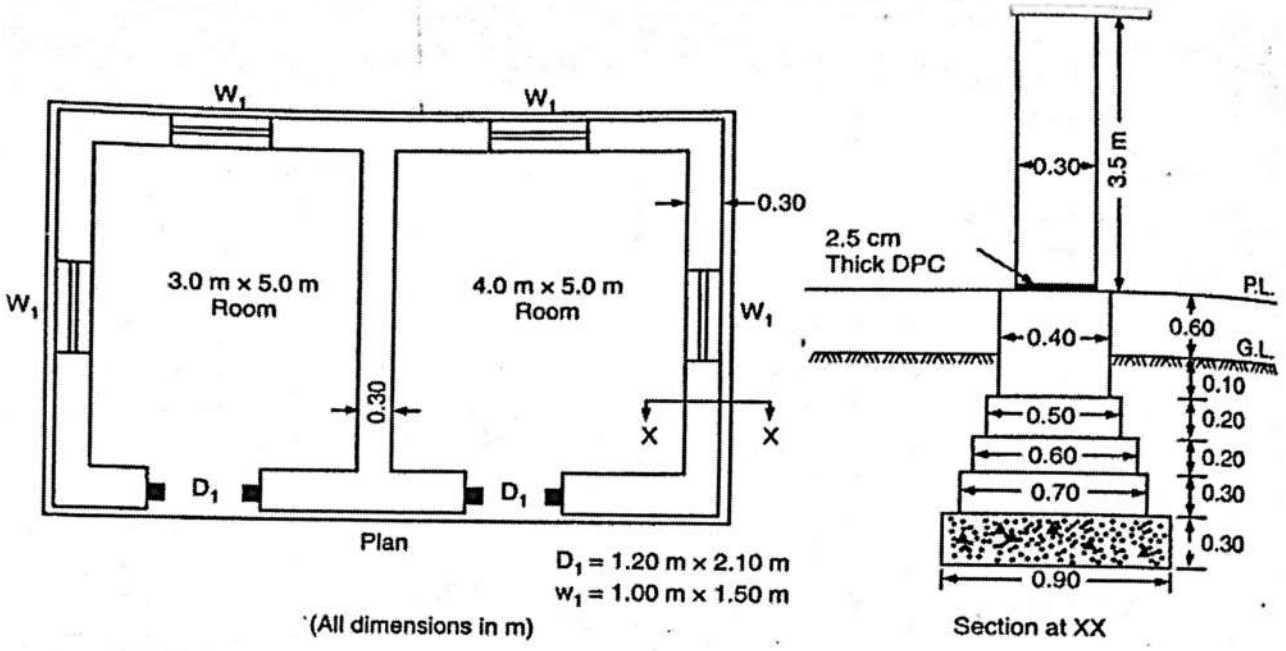
W1
W1
0.30
3.0 m × 5.0 m
Room
4.0 m × 5.0 m
Room
W1
0.30
X
X
D1
D1
Plan
D1 = 1.20 m × 2.10 m
w1 = 1.00 m × 1.50 m
(All dimensions in m)
0.30
3.5 m
2.5 cm
Thick DPC
P.L.
0.40
0.60
G.L.
0.10
0.50
0.20
0.60
0.20
0.70
0.30
0.30
0.90
Section at XX

Fig II

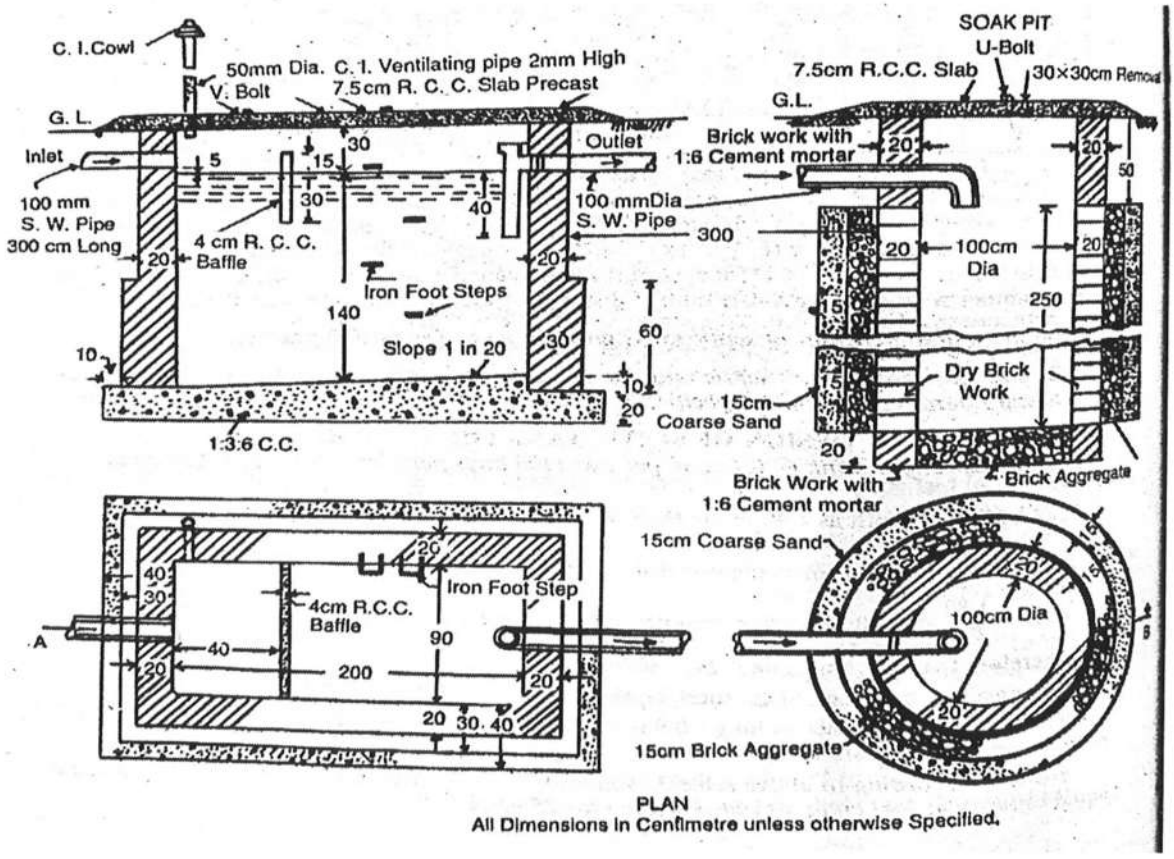

Fig III

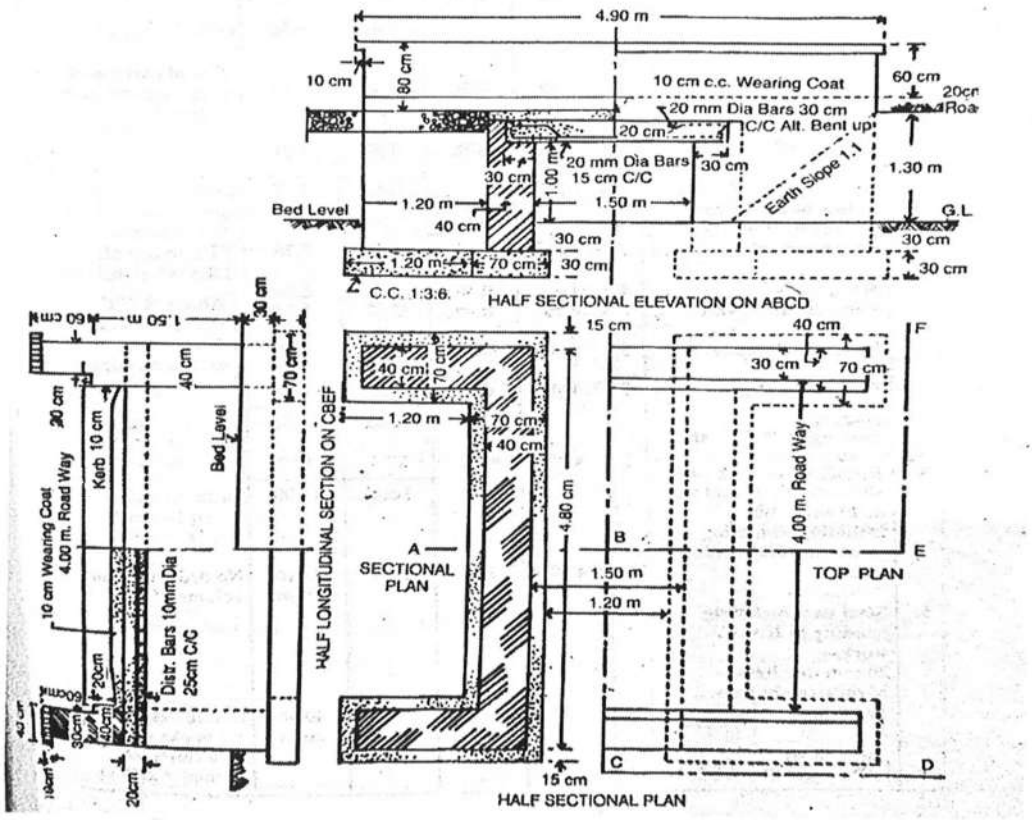

Fig IV

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